Base Notice: DOC NOAA NCEP Operational (OPS) and Research & Development (R&D) High Performance Computing Systems (HPCS) Request for Information (RFI) - RFI-NCEP2009

Notice Details

Solicitation #:
RFI-NCEP2009

Procurement Type:
Special Notice

Date Posted:
November 19,
2008

Title:
DOC NOAA NCEP Operational (OPS) and Research & Development (R&D) High Performance Computing Systems (HPCS) Request for Information (RFI)

Classification Code:
D -- Information technology services, including telecommunications services

NAICS Code:
541512 -- Computer Systems Design Services

Response Date:
Jan 16, 2009 12:00
pm Eastern

Primary Point of Contact.:
Richard Parkerson,
Contract Specialist
richard.parkerson@noaa.gov

Phone: 301-713-9877 x164
Fax: 301-713-2757

Description:

Added: Nov 19, 2008 4:00 pm
The DOC NOAA NCEP Operational (OPS) and Research & Development (R&D) High Performance Computing Systems (HPCS) Request for Information (RFI) RFI-NCEP2009

The National Oceanic and Atmospheric Administration (NOAA) anticipates acquiring advanced high performance computing systems (HPCS) to meet its operational and research and development computing requirements. This requirement includes the possibility of accommodating unanticipated additional internal NOAA HPC requirements as well as external partner agency's weather related HPC needs. The new Operational Centralized Computing System (OCCS) will replace or augment the current Operational and the Research and Development HPCS platforms at the National Centers for Environmental Predictions (NCEP) headquartered in Camp Springs, Maryland. The new replacement systems will be known as the OCCS (operational environment) and the O-R&D (research and development) HPCS and will provide primary resources needed to carry out NOAA's operational and research missions. One of the primary objectives of the acquisition is to have the same technical configuration, i.e., HW, operating systems, etc. for both the OCCS and O-R&D HPCS. NOAA requires the vendor to provide a complete and fully integrated system solution. This requirement facilitates and accelerates the process of transitioning codes developed in the O-R&D environment to running as part of NCEP's production or operational suite of products.

Increased computational power is essential for NOAA to meet its strategic goals related to weather, climate, air quality, coastal and ocean resource management, and national commerce support, thereby providing improved service to the public. NOAA anticipates contract award and initial system delivery in early FY2011. An OCCS/O-R&D HPCS Acquisition Team ("the Team") has been formed within the Department of Commerce. The RFI documents which describe this project are being made available via the Internet at the Project Web Site, http://www.ncep.noaa.gov/ccs. Interested parties should continue to monitor this web site for additional information concerning this project.

NOAA is seeking varied concepts and innovative approaches to obtain the needed computing systems within the time frame and requirements. The RFI documents are intended to provide the high-performance computer industry with a general overview of the requirements and time frames, as well as to open a formal communication channel between industry and the Team. The Team has provided a draft Statement of Need (SON) on the Project Web Site, including information on how to obtain initial benchmark codes. The Team welcomes industry comments, questions and suggestions that will aid it in developing its acquisition strategy and finalizing the SON.

The projected budget for this acquisition is shown in the table below.

Projected Budget By Fiscal Year ($M)
(subject to availability of funds)
2011 2012 2013 2014 2015 2016 2017 2018 2019
Equipment and Maintenance (Base) $26M $26M $26M $26M $26M $26M $26M $26M $26M

The Team will consider input received in response to this RFI as it continues to develop the SON and the Request for Proposals (RFP). The Team does not anticipate the need for a pre-proposal conference, but if one is deemed necessary, information will be posted on the Project Web Site accordingly.

The Team may conduct one-on-one communications with interested vendors in an effort to benefit fully from industry responses to this RFI.

Parties interested in providing information that the Team may use in developing the Government's technical or acquisition approach should review carefully the draft Statement of Need and supporting documents referenced in the draft Statement of Need, all of which are available at the Project Web Site.

One of the purposes of this RFI is to provide vendors with initial benchmark codes that will give an indication of the type of model programs that may be expected to run on both of NOAA's new OCCS and O-R&D HPCS. A complete list of the major model programs and the proposed schedule is available at the Project Web Site. Instructions for obtaining the benchmark codes are available at the Project Web Site. The Team requests that vendors submit their benchmark test results with their RFI response. This will give NOAA an indication of the performance capabilities of each vendor's recommended computing resources. One of the principal outcomes of vendor/government dialog will be to ensure that viable approaches are considered during the competition. The Government may therefore utilize the information provided to refine its acquisition strategy to maximize competition among viable acquisition alternatives.

It is not the Government's intent to disclose vendor proprietary information and trade secrets to the public. The information submitted by vendors during the pre-solicitation period may be used by the Government in preparing its RFP and finalizing the SON, provided this can be done without disclosing proprietary vendor information that is protected from disclosure pursuant to the Freedom of Information Act and other laws and regulations. Proprietary information should be marked as such.

Interested vendors should respond in writing to the following topics. Recommended page lengths are identified in parentheses at the end of each question. Total response to this RFI should be limited to 20 pages, which provides flexibility to extend some answers beyond the recommended length, if needed. Vendors who submit written responses may be invited to augment their written responses with a 2-3 hour oral presentation in early 2009. Vendors responding to this RFI and who are interested in making a presentation to the Team, please notify the Contracting Support Office, Mr. Richard Parkerson, Contract Specialist, via e-mail at richard.parkerson@noaa.gov by 15 December 2008. The Team will make a decision on which vendors to invite to make presentations. Please address the following questions and concerns in the RFI submission:

1. Keep in mind that NOAA is looking to acquire a ‘complete and fully integrated' system solution, i.e., a complete package which describes the Vendor's ability to provide this complete system solution. Briefly describe the involvement Vendor's organization has had in providing HPC systems to Vendor's customers. Has Vendor's HPC involvement included weather/climate applications? Describe relationships Vendor has or has had with particular HPC, storage, communications, software, and facilities providers in support of Vendor's HPC involvement. Any references Vendor can provide would be appreciated. (1 page)

2. Describe Vendor organization's ability to provide engineering support to NOAA HPC users in the Washington, DC and Fairmont, WV areas. (1/2 page)

3. Describe any anticipated HPC technology developments (i.e. compute, storage, network) that NOAA should be aware of to ensure that our SON elicits the best responses from the vendor community. Has Vendor's organization had a role in HPC Grid applications? (1 page)

4. Describe the largest file size Vendor's system can handle now, whether this is a hardware or software limitation and projections for the largest file size during the base and option periods of performance. Describe any alternatives solutions to maximize file size and trade-offs compared with other solutions. Describe the largest number of nodes Vendor's filesystem can handle now and projections for the base and option periods of performance. Describe any alternatives solutions to maximize node number and trade-offs compared with other solutions. (1 page)

5. The user profiles as identified in the SON show the majority of users located in 2 geographic areas with some additional remote users. How would configurations comprising 1 or 2 locations affect Vendor's system design and network bandwidth requirements? Identify the magnitude of any cost impact that could be expected in any given configuration. Additionally, describe the Vendor's approach to user management including local and remote access. Does it include token management, 2-factor authentication and is it compliant with current federal laws policies and

guidelines? (1 page)

6. What facilities will the Vendor propose to house the entire suite of equipment expected as a result of this procurement and what are the challenges associated with providing the facilities? Vendor should describe their ability to evaluate such alternatives including the support and high bandwidth communications requirements. (1 page)

7. Based upon Vendor's knowledge of NOAA's current Operational (OCCS) and Research and Development (O-R&D) procedures and configurations, are there technologies, available now and over the course of the contract period (thru 2020), that would enable NOAA to better integrate its operational and R&D environments in such areas as: job scheduling, programming environment, data management, transitioning models from R&D to operations, high levels of IT security protection? (1 page)

8. NOAA plans to include options to augment the OCCS and O-R&D HPCS with incremental computational increases based on projected future requirements. What would be Vendor organization's ability and approach to responding to unanticipated requirements throughout the course of the contract? What would be the best way to include these requirements in the RFP to enable Vendor's company develop a response? (1/2 page)

9. What issues does Vendor have with respect to the individual benchmark applications NOAA has chosen for this procurement? Does Vendor have any concerns about the approach including the number or the variety of benchmark applications? (1 page)

10. Does the SON make it clear that one of the major goals of the acquisition is to optimize the throughput of each benchmark? (1/2 page)

11. NOAA plans on issuing a performance-based contract for the OCCS and O-R&D HPCS. Describe any performance measures/incentives that Vendor would recommend that NOAA incorporate into the contract. (1/2 page)

12. What questions, recommendations or needs for additional information does Vendor's firm have in response to this RFI and draft SON that would help the Government prepare an RFP that Vendor's firm will be able to respond to effectively? (1 page)

The vendor's submission should reflect an understanding of NOAA's requirements for product delivery and an overall approach for providing the required capabilities. Multiple or alternative approaches are welcome. Although this RFI requests specific information, it is not intended to discourage innovative thinking on the part of industry to propose alternative solutions or approaches that the Team may not have considered.

Vendor responses should identify a point-of-contact including the representative's name, company, e-mail address, mailing address and telephone number both in an e-mail and within the body of the submitted document.

Benchmark results should be summarized according to the instructions included with the benchmark suite of applications. The benchmark instructions are available at http://www.ncep.noaa.gov/ccs. The benchmark codes can be accessed on the same website.

Response Format

Please prepare one (1) paper copy (double-sided) and one (1) ISO 9660 CDROM in Adobe PDF, formatted for 8.5" by 11" sheets, single-spaced with margins of one (1) inch on all sides. The type for all documents submitted (including charts and graphs) should be limited to twenty (20) pages, not to exceed twelve (12) characters-per-linear-inch or be smaller than twelve (12) point, and should not exceed six (6) lines-per-vertical-inch. Additionally, the vendor must provide an electronic copy of their RFI response to the contract specialist as well.

Delivery Requirements

The Team requests that one (1) paper copy, all CD ROMs and an electronic copy be received as a single package by the Government no later than 12:00 PM local time on Friday, 16 January 2009 to the following location:

U.S. Department of Commerce / NOAA
NWS Acquisition Management Division
1325 East-West Highway, Building SSMC II, RM 17364
Silver Spring, MD 20910-3281
Attn: Mr. Richard Parkerson
301.713.9877 x164
301.713.2757 fax

Note that vendors need not respond to this RFI as a prerequisite for participating in the acquisition.

Request this information be provided by 16 January 2009.

Important Notice - In lieu of taking e-mail or phone or fax questions regarding this RFI, please make assumptions based on the information provided herein and document them in your response. Electronic submissions by e-mail are required. Thank you for your understanding in this matter.

All responsible sources are invited to submit a description of their capabilities and experience. Additionally, information regarding type of business, i.e., Large, Small, Woman-Owned, or Disadvantaged business concern should be provided. The North American Industry Classification System (NAICS) 541512, Computer Systems Design Services, $23M size standard applies. Comments, questions and

recommendations must be submitted by e-mail and must be received by 12:00PM EST on January 16, 2009. E-mail responses must be submitted to the following address: richard.parkerson@noaa.gov, with RFI-NCEP2009 noted in the subject header.

This synopsis is for a Request for Information only and does not constitute a commitment on the part of the Government to purchase or acquire systems or services. The Government will not pay for data or time expended on this RFI and is not to be construed as a commitment by the Government to issue a request for proposal or award a contract as a result of this request. This RFI is for informational and planning purposes only.

Place of Contract Performance:
Department Of Commerce, National Centers for Environmental Prediction
Camp Springs, Maryland 20746
United States

Archiving Policy:
Automatic, 15 days after response date

Allow Vendors To Add/Remove From Interested Vendors:
yes

Allow Vendors To View Interested Vendors List:
yes